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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/319,688 06/09/99 HISHINUMA

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IM22/0305

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EXAMINER

TALBOT, B

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ART UNIT

PAPER NUMBER

1762

DATE MAILED: 03/05/01

Please find below and/or attached an Office communication concerning this application r proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/319,688

Applicant(s)

HISHINUMA ET AL.

Examiner

Brian K Talbot

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) 1-11 and 30-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in response to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-11, drawn to a process for producing an electrode.

Group II, claim(s) 12-27, drawn to a process for producing a fuel electrode

Group III, claim(s) 30-33, drawn to fuel electrode.

2. The inventions listed as Groups I, II and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: they do not share the same special technical feature of the fuel electrode (group III) which is that it contains cerium oxide that contains a divalent or trivalent metal dissolved therein and has electronic conductivity in a fuel electrode operating atmosphere.

3. During a telephone conversation with J. Georg Seka on October 19, 2000 a provisional election was made with traverse to prosecute the invention of Group II, claims 12-27.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-11 and 30-33 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

5. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 13 and 14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for transition metals, does not reasonably provide enablement for Ce or Pr as these materials are not transition metals. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make

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and/or use the invention commensurate in scope with these claims. It is noted that on pg. 5, lines 13-16, the metals (Ce and Pr) are designated as transition metals which they are not.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) further in combination with Matsuzaki (5,474,800).

JP 04-121,964 teaches a fuel electrode for solid electrolyte fuel cells. The fuel cell electrode is a cermet comprising Ni-CeO₂-YSZ.

JP 04-121,964 fails to teach a transition metal as well as the Ce compound having a metal oxide dissolved therein.

JP 04-169,067 teaches the addition of an alkaline earth metal or rare earth element along with Nickel and Cerium in producing a fuel cell electrode. Hazbun (4,791,079) teaches doping a stabilized zirconia with titanium or vanadium produces improvement in ion and electron conductivity in fuel cell electrodes.

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Therefore, it would have been obvious at the time the invention was made to have modified JP 04-121,964 electrode cerment with the components as evidenced by JP 04-169,067 and Hazbun (4,791,079) because of the improvement in conductivity displayed by the electrode.

JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) fails to teach forming the fuel electrode with metallo-organic precursors.

Matsuzaki (5,474,800) teaches forming Ni-YSZ electrode fuel cells by mixing metallo-organic precursors of the components, hydrolysis and annealing to form the electrode. The metallo-organic precursors are metal octylates and the nickel is introduced as a powder. The electrode paste is screen printed on the electrolyte.

Therefore, it would have been obvious for one skilled in the art at the time the invention was made to have modified JP 04-121,964 in combination with JP 04-169,067 and Hazbun (4,791,079) cerment by utilizing metallo-organic precursors and oxide powders because of the expectation of achieving similar results.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian K Talbot whose telephone number is (703) 305-3775. The examiner can normally be reached on Tuesday-Friday 7AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck can be reached on (703) 308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-6078 for regular communications and (703) 305-6357 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3775.

A handwritten signature in black ink, appearing to read "B-K Talbot".

Brian K Talbot
Primary Examiner
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BKT
March 1, 2001